Having thus described the invention, what is claimed as new and secured by Letters Patent is:

1. An intrusion detection system comprising:

a coaxial cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating member disposed between the first conductive cable member and the second conductive cable member, the first cable member being loosely disposed in the coaxial cable and thus freely movable relative to the insulating member, to provide an impedance change in response to a disturbance, and the coaxial cable capable of producing a terminal voltage in response to the disturbance; and

a processing unit, operatively coupled to the coaxial cable, for propagating an injected signal into the coaxial cable and receiving a reflected signal altered by the impedance change along the coaxial cable, and locating the disturbance based on a timing differential between the reflected signal relative and the injected signal, in an active state, and for generating a signal in response to the terminal voltage produced from the coaxial cable, in a passive state.

2. The intrusion detection system as in claim 1, further including switching means coupled to the processing unit for alternating in a time sequence between the passive state and the active state.

3. The intrusion detection system as in claim 1, wherein the coaxial cable further includes at least one further conductor.

4. The intrusion detection system as in claim 2, wherein the coaxial cable further includes at least one further conductor.

5. The intrusion detection system as in claim 1, wherein the coaxial cable uses the triboelectric effect to generate the terminal voltage in the passive state.

6. An intrusion detection system comprising:

an integrated sensor cable having an input and an output, the sensor cable having:

a primary cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating member disposed between the first cable member and the second cable member, the first cable member being loosely disposed in the primary cable and thus freely movable relative to the insulating member, to provide an impedance change in response to a disturbance; and

at least one secondary sensor cable capable of producing a response to the disturbance; and

a processing unit, operatively coupled to the input side and the output side of the integrated sensor cable, for propagating an injected signal and receiving a reflected signal altered by the impedance change along the primary cable, and locating the disturbance based on a timing differential between the reflected signal and the injected signal, in an active state, and for generating a signal based on the response from the at least one secondary sensor cable, in a passive state;

wherein the primary cable propagates therealong an injected signal from the processing unit.

7. The intrusion detection system as in claim 6, wherein the integrated sensor cable is encased within an overjacket.

8. The intrusion detection system as in claim 6, wherein the primary cable is encased in a first cable jacket, and wherein the at least one secondary cable is

encased in a second cable jacket, such that the first cable jacket and the second cable jacket are disposed to form the integrated sensor cable.

9. The intrusion detection system as in claim 6, wherein the primary cable further includes at least one further conductor.

10. The integrated sensor cable as in claim 6, wherein the at least one secondary sensor cable, for passive disturbance sensing, includes at least one cable chosen from the group consisting of: triboelectric transducer cable, piezoelectric cable, magnetic cable, and electret cable.

11. The integrated sensor cable as in claim 6, wherein the at least one secondary sensor cable, for passive disturbance sensing, includes at least one fiber optic cable.

12. The integrated sensor cable as in claim 6, wherein the integrated sensor cable further includes at least one power cable.

13. The integrated sensor cable as in claim 6, wherein the integrated sensor cable further includes at least one data cable.

14. An intrusion detection system comprising:

an integrated sensor cable having an input and an output, the sensor cable having:

a coaxial cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating member disposed between the first cable member and the second cable member, the first cable member being loosely disposed in the coaxial cable and thus freely movable relative to the insulating member, to provide an impedance change in response to a disturbance,

and capable of producing a terminal voltage in response to the disturbance;

a reflectometer for propagating an injected signal and receiving a reflected signal altered by the impedance change along the coaxial cable;

a processor for generating a signal in response to the terminal voltage produced from the coaxial cable; and

switching means being coupled to the processor and the reflectometer for alternating in a time sequence between the processor and the reflectometer;

wherein the switching means is coupled to the input and the output of the integrated sensor cable, and

wherein the processor is coupled to the reflectometer for locating the disturbance along the integrated sensor cable based on a timing differential of the reflected signal relative to the injected signal.

15. An intrusion detection system comprising:

an integrated sensor cable having an input and an output, the sensor cable having:

a primary cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating member disposed between the first cable member and the second cable member, the first cable member being loosely disposed in the primary cable and thus freely movable relative to the insulating member, to provide an impedance change in response to a disturbance; and

at least one secondary cable capable of producing a terminal voltage in response to the disturbance;

a reflectometer, coupled to the input of the integrated sensor cable, for propagating an injected signal and receiving a reflected signal altered by the impedance change along the primary cable; and

a processor, coupled to the input and the output of the sensor cable, for generating a signal in response to the terminal voltage produced from the at least on secondary cable;

wherein the processor is coupled to the reflectometer for locating the disturbance along the integrated sensor cable based on a timing differential of the reflected signal relative to the injected signal.

16. The intrusion detection system as in claim 14, wherein the injected signal is a pulsed signal.

17. The intrusion detection system as in claim 14, wherein the processor is a microprocessor based signal processor.

18. The intrusion detection system as in claim 14, wherein the processor is a time domain processor.

19. The intrusion detection system as in claim 14, wherein the processor is a frequency domain processor.

20. The intrusion detection system as in claim 15, wherein the at least one secondary sensor cable, for passive disturbance sensing, includes at least one cable chosen from the group consisting of: piezoelectric cable, magnetic cable, electret cable, and a fiber optic cable.

21. An integrated sensor cable for use in an intrusion detection system having a processing unit, the sensor cable having an input and an output, both the input and the output of the sensor cable for coupling to the processing unit for locating a disturbance along the sensor cable and for generating a signal in response to the disturbance, the integrated sensor cable comprising:

a coaxial cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating

member disposed between the first cable member and the second cable member, the first cable member being loosely disposed in the coaxial cable and thus freely movable relative to the insulating member, to provide an impedance change in response to the disturbance, in an active state, and the coaxial cable capable of producing a terminal voltage in response to the disturbance, in a passive state.

22. The integrated sensor cable as in claim 21, wherein the first conductive cable member encloses the second conductive cable member.

23. The integrated sensor cable as in claim 21, wherein the second conductive cable member encloses the first conductive cable member.

24. The integrated sensor cable as in claim 21, wherein the coaxial cable further includes at least one further conductor.

25. The integrated sensor cable as in claim 21, wherein the coaxial cable uses the triboelectric effect to generate the terminal voltage in the passive state.

26. The integrated sensor cable as in claim 21, wherein the integrated sensor cable includes at least one secondary sensor cable chosen from the group consisting of: triboelectric transducer cable, piezoelectric cable, magnetic cable, electret cable, and fiber optic cable.

27. The integrated sensor cable as in claim 21, wherein the integrated sensor cable further includes at least one power cable.

28. The integrated sensor cable as in claim 21, wherein the integrated sensor cable further includes at least one data cable.

29. The integrated sensor cable as in claim 21, wherein the integrated sensor cable is encased within an overjacket.

30. The integrated sensor cable as in claim 26, wherein the coaxial cable is encased in a first cable jacket, and wherein the at least one secondary cable is encased in a second cable jacket, such that the first cable jacket and the second cable jacket are disposed to form the integrated sensor cable.

31. The integrated sensor cable as in claim 27, wherein the power cable is encased in a cable jacket.

32. An integrated sensor cable for use in an intrusion detection system having a processing unit, the sensor cable having an input and an output, both the input and the output of the sensor cable for coupling to the processing unit for locating a disturbance along the sensor cable and for generating a signal in response to the disturbance, the integrated sensor cable comprising:

a primary cable having a first electrically conductive cable member, a second electrically conductive cable member, and an electrical insulating member disposed between the first cable member and the second cable member, the first cable member being loosely disposed in the coaxial cable and thus freely movable relative to the insulating member, to provide an impedance change in response to the disturbance; and

at least one secondary cable, for passive disturbance sensing capable of producing a passive response to the disturbance.